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<110> Arkowitz, Robert A
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- <151> 1998-10-08
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- <151> 2000-04-07
- <150> US 09/732,180
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- <150> PCT/GB98/03033
- <151> 1998-10-08
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- <151> 1998-06-12
- <150> 9721357.3
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Gln Ile Pro Val Val Ser Ser Asp Asp Leu Arg Ile Cys Lys Lys Ser Val Tyr Asp Phe Leu Ile Ala Val Lys Thr Gln Leu Asn Phe Asp Asp 210 Glu Asn Met Phe Thr Ile Ser Asn Val Phe Ser Asp Asn Ala Gln Asp Leu Ile Lys Ile Ile Asp Val Ile Asn Lys Leu Leu Ala Glu Tyr Ser 245 Asp Ala Ser Asp Ser Gly Gly Gly Asp Glu Asp Val Asn Met Asp Val Gln Ile Thr Asp Glu Arg Ser Lys Val Phe Arg Glu Ile Ile Glu Thr Glu Arg Lys Tyr Val Gln Asp Leu Glu Leu Met Cys Lys Tyr Arg Gln 295 Asp Leu Ile Glu Ala Glu Asn Leu Ser Ser Glu Gln Ile His Leu Leu 310 Phe Pro Asn Leu Asn Glu Ile Ile Asp Phe Gln Arg Arg Phe Leu Asn Gly Leu Glu Cys Asn Ile Asn Val Pro Ile Arg Tyr Gln Arg Ile Gly 345 Ser Val Phe Ile His Ala Ser Leu Gly Pro Phe Asn Ala Tyr Glu Pro Trp Thr Ile Gly Gln Leu Thr Ala Ile Asp Leu Ile Asn Lys Glu Ala 375 Ala Asn Leu Lys Lys Ser Ser Ser Leu Leu Asp Pro Gly Phe Glu Leu Gln Ser Tyr Ile Leu Lys Pro Ile Gln Arg Leu Cys Lys Tyr Pro Leu 410 Leu Leu Lys Glu Leu Ile Lys Thr Ser Pro Glu Tyr Ser Lys Gln Asp 425 Pro His Gly Ser Ser Ser Thr Ser Phe Asn Glu Leu Leu Val Ala 440 Lys Thr Ala Met Lys Glu Leu Ala Asn Gln Val Asn Glu Ala Gln Arg Arg Ala Glu Asn Ile Glu His Leu Glu Lys Leu Lys Glu Arg Val Gly Asn Trp Arg Gly Phe Asn Leu Asp Ala Gln Gly Glu Leu Leu Phe His 490 Gly Gln Val Gly Val Lys Asp Ala Glu Asn Glu Lys Glu Tyr Val Ala

Tyr Leu Phe Glu Lys Ile Val Phe Phe Phe Thr Glu Ile Asp Asp Thr Lys Lys Ser Asp Lys Gln Glu Lys Lys Ser Lys Phe Ser Thr Arg Lys Arg Ser Thr Ser Ser Asn Leu Ser Ser Ser Thr Thr Asn Leu Leu Glu Ser Ile Asn Asn Ser Arg Lys Asp Asn Thr Leu Pro Leu Glu Leu Lys 57.0 Gly Arg Val Tyr Ile Ser Glu Ile Tyr Asn Ile Ser Ala Pro Asn Thr Pro Gly Ser Thr Leu Ile Ile Ser Trp Ser Gly Arg Lys Glu Ser Gly 595 600 Ser Phe Thr Leu Arg Tyr Arg Ser Glu Glu Ala Arg Asn Gln Trp Glu 615 Lys Cys Leu Arg Asp Leu Lys Thr Asn Glu Met Asn Lys Gln Ile His 630 635 Lys Lys Leu Arg Asp Ser Asp Ser Ser Phe Asn Thr Asp Asp Ser Ala Ile Tyr Asp Tyr Thr Gly Ile Ser Thr Ser Pro Val Asn Gln Ser Thr 665 Gln Gln Gln Tyr Tyr Asp His Arg Gly Ser His Ser Ser Arg His His Ser Ser Ser Ser Thr Leu Ser Met Met Lys Asn Asn Arg Val Lys Ser 695 Gly Asp Leu Ser Arg Ile Ser Ser Thr Ser Thr Thr Leu Asp Ser Phe Ser Asn Asn Leu Asn Gly Ser Pro Asn Thr Thr Asn Pro Ser Leu Met Ser Ser Asp Ala Thr Lys Thr Ile Pro Thr Phe Asp Val Ala Ile Lys Leu Leu Tyr Lys Ser Thr Glu Leu Ser Glu Pro Leu Ile Val Asn Ala Gln Ile Glu Tyr Asn Asp Leu Leu Gln Lys Ile Ile Ser Gln Ile Ile Thr Ser Asn Leu Val Ala Asp Asp Val Asn Ile Ser Arg Leu Arg Tyr Lys Asp Asp Glu Gly Asp Phe Val Asn Leu Asn Ser Asp Asp Trp Gly Leu Val Leu Asp Met Leu Thr Ser Glu Asp Phe Tyr Gln Thr Ser Ser Asn Glu Lys Arg Ser Val Thr Val Trp Val Ser

835 840

<210> 25

<211> 22

<212> PRT

<213> Saccharomyces cerevisiae

<400> 25

Lys Leu Pro Val Ile Ala Ser Asp Asp Leu Lys Val Cys Lys Lys Ser 1 5 10 15

Ile Tyr Asp Phe Ile Leu 20

<210> 26

<211> 22

<212> PRT

<213> Candida albicans

<400> 26

Gln Ile Pro Val Val Ser Ser Asp Asp Leu Arg Ile Cys Lys Lys Ser 1 5 10 15

Val Tyr Asp Phe Leu Ile 20

<210> 27

<211> 854

<212> PRT

<213> Saccharomyces cerevisiae

<400> 27

Met Ala Ile Gln Thr Arg Phe Ala Ser Gly Thr Ser Leu Ser Asp Leu 1 5 10 15

Lys Pro Lys Pro Ser Ala Thr Ser Ile Ser Ile Pro Met Gln Asn Val 20 25 30

Met Asn Lys Pro Val Thr Glu Gln Asp Ser Leu Phe His Ile Cys Ala

Asn Ile Arg Lys Arg Leu Glu Val Leu Pro Gln Leu Lys Pro Phe Leu 50 60

Gln Leu Ala Tyr Gln Ser Ser Glu Val Leu Ser Glu Arg Gln Ser Leu 65 70 75 80

Leu Leu Ser Gln Lys Gln His Gln Glu Leu Leu Lys Ser Asn Gly Ala 85 90 95

Asn Arg Asp Ser Ser Asp Leu Ala Pro Thr Leu Arg Ser Ser Ser Ile 100 105 110

Ser Thr Ala Thr Ser Leu Met Ser Met Glu Gly Ile Ser Tyr Thr Asn

Ser Asn Pro Ser Ala Thr Pro Asn Met Glu Asp Thr Leu Leu Thr Phe 130 140

Ser Met Gly Ile Leu Pro Ile Thr Met Asp Cys Asp Pro Val Thr Gln Leu Ser Gln Leu Phe Gln Gln Gly Ala Pro Leu Cys Ile Leu Phe Asn Ser Val Lys Pro Gln Phe Lys Leu Pro Val Ile Ala Ser Asp Asp Leu Lys Val Cys Lys Lys Ser Ile Tyr Asp Phe Ile Leu Gly Cys Lys Lys His Phe Ala Phe Asn Asp Glu Glu Leu Phe Thr Ile Ser Asp Val Phe Ala Asn Ser Thr Ser Gln Leu Val Lys Val Leu Glu Val Val Glu Thr Leu Met Asn Ser Ser Pro Thr Ile Phe Pro Ser Lys Ser Lys Thr Gln Gln Ile Met Asn Ala Glu Asn Gln His Arg His Gln Pro Gln Gln Ser 265 Ser Lys Lys His Asn Glu Tyr Val Lys Ile Ile Lys Glu Phe Val Ala Thr Glu Arg Lys Tyr Val His Asp Leu Glu Ile Leu Asp Lys Tyr Arg 295 Gln Gln Leu Leu Asp Ser Asn Leu Ile Thr Ser Glu Glu Leu Tyr Met 315 Leu Phe Pro Asn Leu Gly Asp Ala Ile Asp Phe Gln Arg Arg Phe Leu 325 Ile Ser Leu Glu Ile Asn Ala Leu Val Glu Pro Ser Lys Gln Arg Ile 345 Gly Ala Leu Phe Met His Ser Lys His Phe Phe Lys Leu Tyr Glu Pro Trp Ser Ile Gly Gln Asn Ala Ala Ile Glu Phe Leu Ser Ser Thr Leu His Lys Met Arg Val Asp Glu Ser Gln Arg Phe Ile Ile Asn Asn Lys 395 Leu Glu Leu Gln Ser Phe Leu Tyr Lys Pro Val Gln Arg Leu Cys Arg Tyr Pro Leu Leu Val Lys Glu Leu Leu Ala Glu Ser Ser Asp Asp Asn Asn Thr Lys Glu Leu Glu Ala Ala Leu Asp Ile Ser Lys Asn Ile Ala 440 Arg Ser Ile Asn Glu Asn Gln Arg Arg Thr Glu Asn His Gln Val Val

Lys Lys Leu Tyr Gly Arg Val Val Asn Trp Lys Gly Tyr Arg Ile Ser Lys Phe Gly Glu Leu Leu Tyr Phe Asp Lys Val Phe Ile Ser Thr Thr Asn Ser Ser Ser Glu Pro Glu Arg Glu Phe Glu Val Tyr Leu Phe Glu Lys Ile Ile Ile Leu Phe Ser Glu Val Val Thr Lys Lys Ser Ala Ser Ser Leu Ile Leu Lys Lys Lys Ser Ser Thr Ser Ala Ser Ile Ser Ala Ser Asn Ile Thr Asp Asn Asn Gly Ser Pro His His Ser Tyr His Lys 550 555 Arg His Ser Asn Ser Ser Ser Ser Asn Asn Ile His Leu Ser Ser 570 Ser Ala Ala Ile Ile His Ser Ser Thr Asn Ser Ser Asp Asn Asn 585 Ser Asn Asn Ser Ser Ser Ser Leu Phe Lys Leu Ser Ala Asn Glu 600 Pro Lys Leu Asp Leu Arg Gly Arg Ile Met Ile Met Asn Leu Asn Gln 615 Ile Ile Pro Gln Asn Asn Arg Ser Leu Asn Ile Thr Trp Glu Ser Ile 630 635 Lys Glu Gln Gly Asn Phe Leu Leu Lys Phe Lys Asn Glu Glu Thr Arg 650 Asp Asn Trp Ser Ser Cys Leu Gln Gln Leu Ile His Asp Leu Lys Asn 665 Glu Gln Phe Lys Ala Arg His His Ser Ser Thr Ser Thr Thr Ser Ser Thr Ala Lys Ser Ser Ser Met Met Ser Pro Thr Thr Met Asn Thr Pro Asn His His Asn Ser Arg Gln Thr His Asp Ser Met Ala Ser Phe Ser Ser Ser His Met Lys Arg Val Ser Asp Val Leu Pro Lys Arg Arg 730 Thr Thr Ser Ser Ser Phe Glu Ser Glu Ile Lys Ser Ile Ser Glu Asn Phe Lys Asn Ser Ile Pro Glu Ser Ser Ile Leu Phe Arg Ile Ser Tyr Asn Asn Asn Ser Asn Asn Thr Ser Ser Ser Glu Ile Phe Thr Leu Leu 775 Val Glu Lys Val Trp Asn Phe Asp Asp Leu Ile Met Ala Ile Asn Ser

785 790 795 800

Lys Ile Ser Asn Thr His Asn Asn Ile Ser Pro Ile Thr Lys Ile 805 810 815

Lys Tyr Gln Asp Glu Asp Gly Asp Phe Val Val Leu Gly Ser Asp Glu 820 825 830

Asp Trp Asn Val Ala Lys Glu Met Leu Ala Glu Asn Asn Glu Lys Phe 835 840 845

Leu Asn Ile Arg Leu Tyr 850

<210> 28

<211> 837

<212> PRT

<213> Saccharomyces cerevisiae

<400> 28

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Ile Ser Ile Pro Met Gln Asn Val Met Asn Lys Pro Val Thr Glu Gln
20 25 30

Asp Ser Leu Phe His Ile Cys Ala Asn Ile Arg Lys Arg Leu Glu Val 35 40 45

Leu Pro Gln Leu Lys Pro Phe Leu Gln Leu Ala Tyr Gln Ser Ser Glu
50 60

Val Leu Ser Glu Arg Gln Ser Leu Leu Ser Gln Lys Gln His Gln 65 70 75 80

Glu Leu Leu Lys Ser Asn Gly Ala Asn Arg Asp Ser Ser Asp Leu Ala 85 90 95

Pro Thr Leu Arg Ser Ser Ser Ile Ser Thr Ala Thr Ser Leu Met Ser 100 105 110

Met Glu Gly Ile Ser Tyr Thr Asn Ser Asn Pro Ser Ala Thr Pro Asn 115 120 125

Met Glu Asp Thr Leu Leu Thr Phe Ser Met Gly Ile Leu Pro Ile Thr 130 140

Met Asp Cys Asp Pro Val Thr Gln Leu Ser Gln Leu Phe Gln Gln Gly 145 150 150 160

Ala Pro Leu Cys Ile Leu Phe Asn Ser Val Lys Pro Gln Phe Lys Leu 165 170 175

Pro Val Ile Ala Ser Asp Asp Leu Lys Val Cys Lys Lys Ser Ile Tyr 180 185 190

Asp Phe Ile Leu Gly Cys Lys Lys His Phe Ala Phe Asn Asp Glu Glu
195 200 205

Leu Phe Thr Ile Ser Asp Val Phe Ala Asn Ser Thr Ser Gln Leu Val

215 220 Lys Val Leu Glu Val Val Glu Thr Leu Met Asn Ser Ser Pro Thr Ile 235 Phe Pro Ser Lys Ser Lys Thr Gln Gln Ile Met Asn Ala Glu Asn Gln 250 His Arg His Gln Pro Gln Gln Ser Ser Lys Lys His Asn Glu Tyr Val 265 Lys Ile Ile Lys Glu Phe Val Ala Thr Glu Arg Lys Tyr Val His Asp 280 Leu Glu Ile Leu Asp Lys Tyr Arg Gln Gln Leu Leu Asp Ser Asn Leu Ile Thr Ser Glu Glu Leu Tyr Met Leu Phe Pro Asn Leu Gly Asp Ala 310 Ile Asp Phe Gln Arg Arg Phe Leu Ile Ser Leu Glu Ile Asn Ala Leu 325 Val Glu Pro Ser Lys Gln Arg Ile Gly Ala Leu Phe Met His Ser Lys 345 His Phe Phe Lys Leu Tyr Glu Pro Trp Ser Ile Gly Gln Asn Ala Ala Ile Glu Phe Leu Ser Ser Thr Leu His Lys Met Arg Val Asp Glu Ser 375 Gln Arg Phe Ile Ile Asn Asn Lys Leu Glu Leu Gln Ser Phe Leu Tyr Lys Pro Val Gln Arg Leu Cys Arg Tyr Pro Leu Leu Val Lys Glu Leu 410 Leu Ala Glu Ser Ser Asp Asp Asn Asn Thr Lys Glu Leu Glu Ala Ala Leu Asp Ile Ser Lys Asn Ile Ala Arg Ser Ile Asn Glu Asn Gln Arg Arg Thr Glu Asn His Gln Val Val Lys Leu Tyr Gly Arg Val Val Asn Trp Lys Gly Tyr Arg Ile Ser Lys Phe Gly Glu Leu Leu Tyr Phe Asp Lys Val Phe Ile Ser Thr Thr Asn Ser Ser Ser Glu Pro Glu Arg 490 Glu Phe Glu Val Tyr Leu Phe Glu Lys Ile Ile Leu Phe Ser Glu 505 Val Val Thr Lys Lys Ser Ala Ser Ser Leu Ile Leu Lys Lys Ser Ser Thr Ser Ala Ser Ile Ser Ala Ser Asn Ile Thr Asp Asn Asn Gly 535

Ser Pro His His Ser Tyr His Lys Arg His Ser Asn Ser Ser Ser Ser Asn Asn Ile His Leu Ser Ser Ser Ala Ala Ala Ile Ile His Ser Ser Thr Asn Ser Ser Asp Asn Asn Ser Asn Asn Ser Ser Ser Ser 585 Leu Phe Lys Leu Ser Ala Asn Glu Pro Lys Leu Asp Leu Arg Gly Arg Ile Met Ile Met Asn Leu Asn Gln Ile Ile Pro Gln Asn Asn Arg Ser 615 Leu Asn Ile Thr Trp Glu Ser Ile Lys Glu Gln Gly Asn Phe Leu Leu Lys Phe Lys Asn Glu Glu Thr Arg Asp Asn Trp Ser Ser Cys Leu Gln Gln Leu Ile His Asp Leu Lys Asn Glu Gln Phe Lys Ala Arg His His 665 Ser Ser Thr Ser Thr Ser Ser Thr Ala Lys Ser Ser Ser Met Met Ser Pro Thr Thr Met Asn Thr Pro Asn His His Asn Ser Arg Gln 690 695 Thr His Asp Ser Met Ala Ser Phe Ser Ser His Met Lys Arg Val 710 715 Ser Asp Val Leu Pro Lys Arg Arg Thr Thr Ser Ser Ser Phe Glu Ser 730 725 Glu Ile Lys Ser Ile Ser Glu Asn Phe Lys Asn Ser Ile Pro Glu Ser 745 Ser Ile Leu Phe Arg Ile Ser Tyr Asn Asn Ser Asn Asn Thr Ser Ser Ser Glu Ile Phe Thr Leu Leu Val Glu Lys Val Trp Asn Phe Asp Asp Leu Ile Met Ala Ile Asn Ser Lys Ile Ser Asn Thr His Asn Asn 790 795 Asn Ile Ser Pro Ile Thr Lys Ile Lys Tyr Gln Asp Glu Asp Gly Asp Phe Val Val Leu Gly Ser Asp Glu Asp Trp Asn Val Ala Lys Glu Met

825

<210> 29 <211> 813

Leu Ala Glu Asn Asn 835 <212> PRT <213> Candida albicans

<400> 29

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Val Ser Ser Gly Pro Val Asn Ile Asn Asn Phe Asn Lys Pro Ser Thr 20 25 30

Pro Lys Asp His Leu Phe Tyr Arg Cys Glu Ser Leu Lys Arg Lys Leu 35 40 45

Gln Lys Ile Pro Gly Met Glu Pro Phe Leu Asn Gln Ala Phe Asn Gln 50 55 60

Ala Glu Gln Leu Ser Glu Gln Gln Ala Leu Ala Leu Ala Gln Glu Arg
65 70 75 80

Ser Asn Gly Asn Gly His Ser Asn Gly Lys Arg His Gln Ser Leu Asp 85 90 95

Gly Ala Met Asn Arg Leu Ser Val Gly Ser Asp Ser Ser Ser Ile Gln
100 105 110

Gly Ser Leu Thr Arg Met Ala Thr Asn Ala Ser Thr Ser Ser Leu Ile 115 120 . 125

Ser Gly Met Pro Asn Asn Asn Thr Leu Phe Thr Phe Thr Ala Gly Val 130 135 140

Leu Pro Ala Asn Ile Ser Val Asp Pro Ala Thr His Leu Trp Lys Leu 145 150 155 160

Phe Gln Gln Gly Ala Pro Phe Cys Val Leu Ile Asn His Ile Leu Pro 165 170 175

Asp Ser Gln Ile Pro Val Val Ser Ser Asp Asp Leu Arg Ile Cys Lys 180 185 190

Lys Ser Val Tyr Asp Phe Leu Ile Ala Val Lys Thr Gln Leu Asn Phe 195 200 205

Asp Asp Glu Asn Met Phe Thr Ile Ser Asn Val Phe Ser Asp Asn Ala 210 215 220

Gln Asp Leu Ile Lys Ile Ile Asp Val Ile Asn Lys Leu Leu Ala Glu 225 230 235 240

Tyr Ser Asp Ala Ser Asp Ser Gly Gly Gly Asp Glu Asp Val Asn Met
245 250 255

Asp Val Gln Ile Thr Asp Glu Arg Ser Lys Val Phe Arg Glu Ile Ile 260 265 270

Glu Thr Glu Arg Lys Tyr Val Gln Asp Leu Glu Leu Met Cys Lys Tyr 275 280 285

Arg Gln Asp Leu Ile Glu Ala Glu Asn Leu Ser Ser Glu Gln Ile His 290 295 300

Leu Leu Phe Pro Asn Leu Asn Glu Ile Ile Asp Phe Gln Arg Arg Phe Leu Asn Gly Leu Glu Cys Asn Ile Asn Val Pro Ile Arg Tyr Gln Arg 330 Ile Gly Ser Val Phe Ile His Ala Ser Leu Gly Pro Phe Asn Ala Tyr 345 Glu Pro Trp Thr Ile Gly Gln Leu Thr Ala Ile Asp Leu Ile Asn Lys Glu Ala Ala Asn Leu Lys Lys Ser Ser Ser Leu Leu Asp Pro Gly Phe Glu Leu Gln Ser Tyr Ile Leu Lys Pro Ile Gln Arg Leu Cys Lys Tyr Pro Leu Leu Lys Glu Leu Ile Lys Thr Ser Pro Glu Tyr Ser Lys 410 Gln Asp Pro His Gly Ser Ser Ser Thr Ser Phe Asn Glu Leu Leu 425 Val Ala Lys Thr Ala Met Lys Glu Leu Ala Asn Gln Val Asn Glu Ala 440 Gln Arg Arg Ala Glu Asn Ile Glu His Leu Glu Lys Leu Lys Glu Arg 455 Val Gly Asn Trp Arg Gly Phe Asn Leu Asp Ala Gln Gly Glu Leu Leu 475 Phe His Gly Gln Val Gly Val Lys Asp Ala Glu Asn Glu Lys Glu Tyr 490 Val Ala Tyr Leu Phe Glu Lys Ile Val Phe Phe Phe Thr Glu Ile Asp Asp Thr Lys Lys Ser Asp Lys Gln Glu Lys Lys Ser Lys Phe Ser Thr Arg Lys Arg Ser Thr Ser Ser Asn Leu Ser Ser Ser Thr Thr Asn Leu 535 Leu Glu Ser Ile Asn Asn Ser Arg Lys Asp Asn Thr Leu Pro Leu Glu Leu Lys Gly Arg Val Tyr Ile Ser Glu Ile Tyr Asn Ile Ser Ala Pro 570 Asn Thr Pro Gly Ser Thr Leu Ile Ile Ser Trp Ser Gly Arg Lys Glu Ser Gly Ser Phe Thr Leu Arg Tyr Arg Ser Glu Glu Ala Arg Asn Gln Trp Glu Lys Cys Leu Arg Asp Leu Lys Thr Asn Glu Met Asn Lys Gln Ile His Lys Lys Leu Arg Asp Ser Asp Ser Ser Phe Asn Thr Asp Asp 625 630 635 640 Ser Ala Ile Tyr Asp Tyr Thr Gly Ile Ser Thr Ser Pro Val Asn Gln 645 650 Ser Thr Gln Gln Tyr Tyr Asp His Arg Gly Ser His Ser Ser Arg 665 His His Ser Ser Ser Ser Thr Leu Ser Met Met Lys Asn Asn Arg Val 680 Lys Ser Gly Asp Leu Ser Arg Ile Ser Ser Thr Ser Thr Thr Leu Asp 695 Ser Phe Ser Asn Asn Leu Asn Gly Ser Pro Asn Thr Thr Asn Pro Ser 710 715 Leu Met Ser Ser Asp Ala Thr Lys Thr Ile Pro Thr Phe Asp Val Ala Ile Lys Leu Leu Tyr Lys Ser Thr Glu Leu Ser Glu Pro Leu Ile Val 745 Asn Ala Gln Ile Glu Tyr Asn Asp Leu Leu Gln Lys Ile Ile Ser Gln Ile Ile Thr Ser Asn Leu Val Ala Asp Asp Val Asn Ile Ser Arg Leu Arg Tyr Lys Asp Asp Glu Gly Asp Phe Val Asn Leu Asn Ser Asp Asp 790 795 Asp Trp Gly Leu Val Leu Asp Met Leu Thr Ser Glu Asp 805 <210> 30 <211> 684 <212> PRT <213> Saccharomyces cerevisiae Asp Pro Val Thr Gln Leu Ser Gln Leu Phe Gln Gln Gly Ala Pro Leu Cys Ile Leu Phe Asn Ser Val Lys Pro Gln Phe Lys Leu Pro Val Ile

Ala Ser Asp Asp Leu Lys Val Cys Lys Lys Ser Ile Tyr Asp Phe Ile
Leu Gly Cys Lys Lys His Phe Ala Phe Asn Asp Glu Glu Leu Phe Thr
50 Ser Asp Val Phe Ala Asn Ser Thr Ser Gln Leu Val Lys Val Leu
65 Glu Val Val Glu Thr Leu Met Asn Ser Ser Pro Thr Ile Phe Pro Ser
85 Lys Ser Lys Thr Gln Gln Ile Met Asn Ala Glu Asn Gln His Arg His

			100					105					110		
Gln	Pro	Gln 115	Gln	Ser	Ser	Lys	Lys 12.0	His	Asn	Glu	Tyr	Val 125	Lys	Ile	Ile
Lys	Glu 130	Phe	Val	Ala	Thr	Glu 135	Arg	Lys	Tyr	Val	His 140	Asp	Leu	Glu	Ile
Leu 145	Asp	Lys	Tyr	Arg	Gln 150	Gln	Leu	Leu	Asp	Ser 155	Asn	Leu	Ile	Thr	Ser 160
Glu	Glu	Leu	Tyr	Met 165	Leu	Phe	Pro	Asn	Leu 170	Gly	Asp	Ala	Ile	Asp 175	Phe
Gln	Arg	Arg	Phe 180	Leu	Ile	Ser	Leu	Glu 185	Ile	Asn	Ala	Lėu	Val 190	Glu	Pro
Ser	Lys	Gln 195	Arg	Ile	Gly	Ala	Leu 200	Phe	Met	His	Ser	Lys 205	His	Phe	Phe
Lys	Leu 210	Tyr	Glu	Pro	Trp	Ser 215	Ile	Gly	Gln	Asn	Ala 220	Ala	Ile	Glu	Phe
Leu 225	Ser	Ser	Thr	Leu	His 230	Lys	Met	Arg	Val	Asp 235	Glu	Ser	Gln	Arg	Phe 240
Ile	Ile	Asn	Asn	Lys 245		Glu	Leu	Gln	Ser 250		Leu	Tyr	ГÀЗ	Pro 255	Val
Gln	Arg	Leu	. Cys 260		Tyr	Pro	Leu	Leu 265		Lys	Glu	Leu	Leu 270	Ala	Glu
Ser	Ser	Asp 275		Asn	Asn	Thr	Lys 280		Leu	ı Glu	ı Ala	Ala 285	Leu	Asp	Ile
Ser	Lys 290		ıle	e Ala	Arg	Ser 295		Asn	Glu	ı Asr	300	Arg	Arg	Thr	Glu
305	i				310	•				315	5				Lys 320
Gly	Туг	Arg	g Il€	325		Phe	e Gly	g Glu	1 Let 330		1 Ту1	: Phe	e Asp	335	Val
Phe	: Ile	e Sei	Thi 340		Asn	ser	Ser	345		ı Pro	o Glu	ı Arg	350	ı Phe	e Glu
Va]	Туз	r Let 35!		e Glu	i .Lys	i Ile	360		e Lei	u Ph	e Se	r Glu 36!	u Val	l Val	Thr
Lys	370		r Ala	a Sei	r Sei	Let 379		e Lei	л Гу	s Ly	38	s Se: O	r Sei	r Thi	s Ser
Ala 38		r Il	e Se	r Ala	390		n Ile	e Th:	r As	p As 39		n Gl	y Se:	r Pro	400
Hi	s Se:	т Ту	r Hi	s Ly:		g Hi	s Se	r Asi	n Se 41		r Se	r Se	r Ası	n Ası 41!	n Ile
Hi	s Le	u Se	r Se		r Se	r Ala	a Ala	a Al 42		e Il	e Hi	s Se	r Se 43	r Th:	r Asr

Ser Ser Asp Asn Asn Ser Asn Asn Ser Ser Ser Ser Ser Leu Phe Lys 435 440 445

Leu Ser Ala Asn Glu Pro Lys Leu Asp Leu Arg Gly Arg Ile Met Ile 450 455 460

Met Asn Leu Asn Gln Ile Ile Pro Gln Asn Asn Arg Ser Leu Asn Ile 465 470 475 480

Thr Trp Glu Ser Ile Lys Glu Gln Gly Asn Phe Leu Leu Lys Phe Lys
485
490
495

Asn Glu Glu Thr Arg Asp Asn Trp Ser Ser Cys Leu Gln Gln Leu Ile 500 505 510

His Asp Leu Lys Asn Glu Gln Phe Lys Ala Arg His His Ser Ser Thr 515 520 525

Ser Thr Thr Ser Ser Thr Ala Lys Ser Ser Ser Met Met Ser Pro Thr 530 540

Thr Thr Met Asn Thr Pro Asn His His Asn Ser Arg Gln Thr His Asp 545 550 555

Ser Met Ala Ser Phe Ser Ser Ser His Met Lys Arg Val Ser Asp Val
565 570 575

Leu Pro Lys Arg Arg Thr Thr Ser Ser Ser Phe Glu Ser Glu Ile Lys
580 585 590

Ser Ile Ser Glu Asn Phe Lys Asn Ser Ile Pro Glu Ser Ser Ile Leu
595 600 605

Phe Arg Ile Ser Tyr Asn Asn Asn Ser Asn Asn Thr Ser Ser Glu 610 620

Ile Phe Thr Leu Leu Val Glu Lys Val Trp Asn Phe Asp Asp Leu Ile 625 630 635 640

Met Ala Ile Asn Ser Lys Ile Ser Asn Thr His Asn Asn Asn Ile Ser 645 650 655

Pro Ile Thr Lys Ile Lys Tyr Gln Asp Glu Asp Gly Asp Phe Val Val 660 665 670

Leu Gly Ser Asp Glu Asp Trp Asn Val Ala Lys Glu 675 680

<210> 31

<211> 742

<212> PRT

<213> Schizosaccharomyces pombe

<400> 31

Asp Pro Val Thr Glu Ile Trp Leu Phe Cys Arg Leu Gly Tyr Pro Leu 1 5 10 15

Cys Ala Leu Phe Asn Cys Leu Pro Val Lys Gln Lys Leu Glu Val Asn

Ser Ser Val Ser Leu Glu Asn Thr Asn Val Cys Lys Ala Ser Leu Tyr 35 40 45

Arg Phe Met Leu Met Cys Lys Asn Glu Leu Gly Leu Thr Asp Ala Ala 50 55 60

Leu Phe Ser Ile Ser Glu Ile Tyr Lys Pro Ser Thr Ala Pro Leu Val 65 70 75 80

Arg Ala Leu Gln Thr Ile Glu Leu Leu Leu Lys Lys Tyr Glu Val Ser 85 90 95

Asn Thr Thr Lys Ser Ser Ser Thr Pro Ser Pro Ser Thr Asp Asp Asn 100 105 110

Val Pro Thr Gly Thr Leu Asn Ser Leu Ile Ala Ser Gly Arg Arg Val 115 120 125

Thr Ala Glu Leu Tyr Glu Thr Glu Leu Lys Tyr Ile Gln Asp Leu Glu 130 135 140

Tyr Leu Ser Asn Tyr Met Val Ile Leu Gln Gln Lys Gln Ile Leu Ser 145 150 155 160

Gln Asp Thr Ile Leu Ser Ile Phe Thr Asn Leu Asn Glu Ile Leu Asp 165 170 175

Phe Gln Arg Arg Phe Leu Val Gly Leu Glu Met Asn Leu Ser Leu Pro 180 185 190

Val Glu Glu Gln Arg Leu Gly Ala Leu Phe Ile Ala Leu Glu Glu Gly 195 200 205

Phe Ser Val Tyr Gln Val Phe Cys Thr Asn Phe Pro Asn Ala Gln Gln 210 215 220

Leu Ile Ile Asp Asn Gln Asn Gln Leu Leu Lys Val Ala Asn Leu Leu 225 230 235 240

Glu Pro Ser Tyr Glu Leu Pro Ala Leu Leu Ile Lys Pro Ile Gln Arg 245 250 255

Ile Cys Lys Tyr Pro Leu Leu Leu Asn Gln Leu Leu Lys Gly Thr Pro 260 265 270

Ser Gly Tyr Gln Tyr Glu Glu Glu Leu Lys Gln Gly Met Ala Cys Val 275 280 285

Val Arg Val Ala Asn Gln Val Asn Glu Thr Arg Arg Ile His Glu Asn 290 295 300

Arg Asn Ala Ile Ile Glu Leu Glu Gln Arg Val Ile Asp Trp Lys Gly 305 310 315 320

Tyr Ser Leu Gln Tyr Phe Gly Gln Leu Leu Val Trp Asp Val Val Asn 325 330 335

Val Cys Lys Ala Asp Ile Glu Arg Glu Tyr His Val Tyr Leu Phe Glu 340 345

Lys Ile Leu Leu Cys Cys Lys Glu Met Ser Thr Leu Lys Arg Gln Ala 355 360 365

Arg Ser Ile Ser Met Asn Lys Lys Thr Lys Arg Leu Asp Ser Leu Gln 370 380

Leu Lys Gly Arg Ile Leu Thr Ser Asn Ile Thr Thr Val Val Pro Asn 385 390 395 400

His His Met Gly Ser Tyr Ala Ile Gln Ile Phe Trp Arg Gly Asp Pro
405 410 415

Gln His Glu Ser Phe Ile Leu Lys Leu Arg Asn Glu Glu Ser His Lys 420 425 430

Leu Trp Met Ser Val Leu Asn Arg Leu Leu Trp Lys Asn Glu His Gly 435 440 445

Ser Pro Lys Asp Ile Arg Ser Ala Ala Ser Thr Pro Ala Asn Pro Val 450 455 460

Tyr Asn Arg Ser Ser Ser Gln Thr Ser Lys Gly Tyr Asn Ser Ser Asp 465 470 475 480

Tyr Asp Leu Leu Arg Thr His Ser Leu Asp Glu Asn Val Asn Ser Pro 485 490 495

Thr Ser Ile Ser Ser Pro Ser Ser Lys Ser Ser Pro Phe Thr Lys Thr 500 505 510

Thr Ser Lys Asp Thr Lys Ser Ala Thr Thr Thr Asp Glu Arg Pro Ser 515 520 525

Asp Phe Ile Arg Leu Asn Ser Glu Glu Ser Val Gly Thr Ser Ser Leu 530 540

Arg Thr Ser Gln Thr Thr Ser Thr Ile Val Ser Asn Asp Ser Ser Ser 545 550 560

Thr Ala Ser Ile Pro Ser Gln Ile Ser Arg Ile Ser Gln Val Asn Ser 565 570 575

Leu Leu Asn Asp Tyr Asn Tyr Asn Arg Gln Ser His Ile Thr Arg Val

Tyr Ser Gly Thr Asp Asp Gly Ser Ser Val Ser Ile Phe Glu Asp Thr 595 600 605

Ser Ser Ser Thr Lys Gln Lys Ile Phe Asp Gln Pro Thr Thr Asn Asp 610 615 620

Cys Asp Val Met Arg Pro Arg Gln Tyr Ser Tyr Ser Ala Gly Met Lys 625 630 635 640

Ser Asp Gly Ser Leu Leu Pro Ser Thr Lys His Thr Ser Leu Ser Ser 645 650 655

Ser Ser Thr Ser Thr Ser Leu Ser Val Arg Asn Thr Thr Asn Val Lys

Ile Arg Leu Arg Leu His Glu Val Ser Leu Val Leu Val Val Ala His

685 675 680 Asp Ile Thr Phe Asp Glu Leu Leu Ala Lys Val Glu His Lys Ile Lys 695 Leu Cys Gly Ile Leu Lys Gln Ala Val Pro Phe Arg Val Arg Leu Lys Tyr Val Asp Glu Asp Gly Asp Phe Ile Thr Ile Thr Ser Asp Glu Asp 730 Val Leu Met Ala Phe Glu 740 <210> 32 <211> 20 <212> DNA <213> Artificial Sequence <223> Description of Artificial Sequence: Primer <220> <221> misc feature <222> (12) <223> n is a or c or g or t <400> 32 20 aartayrtkc angayttrga <210> 33 <211> 18 <212> DNA <213> Artificial Sequence <223> Description of Artificial Sequence: Primer <220> <221> misc\_feature <222> (13) <223> n is a or c or g or t <400> 33 18 rattttytcr aanarrta <210> 34 <211> 76 PRT <212> Candida albicans <213> <400> 34 Pro Phe Cys Val Leu Ile Asn His Ile Leu Pro Asp Ser Gln Ile Pro Val Val Ser Ser Asp Asp Leu Arg Ile Cys Lys Lys Ser Val Tyr Asp

Phe Leu Ile Ala Val Lys Thr Gln Leu Asn Phe Asp Asp Glu Asn Met

35 40 45

Phe Thr Ile Ser Asn Val Phe Ser Asp Asn Ala Gln Asp Leu Ile Lys 50 55 60

Ile Ile Asp Val Ile Asn Lys Leu Leu Ala Glu Tyr 65 70 75

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Asp Ser Gln Ile Pro Val Val Ser Ser Asp Asp Leu Arg Ile Cys Lys
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Lys Ser Val

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Pro Phe Cys Val Leu Ile Asn His Ile Leu Pro Asp Ser Gln Ile Pro 1 5 10 15

Val Val Ser Ser Asp Asp Leu Arg Ile Cys Lys Lys Ser Val Tyr Asp 20 25 30

Phe Leu Ile Ala Val Lys Thr Gln Leu Asn Phe Asp Asp Glu Asn Met 35 40 45

Phe Thr Ile Ser Asn Val Phe Ser Asp Asn Ala Gln Asp Leu Ile Lys 50 55 60

Ile Ile Asp Val Ile Asn Lys Leu Leu 65 70

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<211> 73

<212> PRT

<213> Saccharomyces cerevisiae

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Pro Leu Cys Ile Leu Phe Asn Ser Val Lys Pro Gln Phe Lys Leu Pro 1 5 10 15

Val Ile Ala Ser Asp Asp Leu Lys Val Cys Lys Lys Ser Ile Tyr Asp 20 25 30

Phe Ile Leu Gly Cys Lys Lys His Phe Ala Phe Asn Asp Glu Glu Leu 35 40 45

Phe Thr Ile Ser Asp Val Phe Ala Asn Ser Thr Ser Gln Leu Val Lys 50 55 60

Val Leu Glu Val Val Glu Thr Leu Met